**In the Drawings**

There are no amendments to the drawings.

## Remarks

In response to the Examiner's Claim Objections, Applicant has amended Claims 25 and 34; and cancelled Claims 5, 6, 21, 22 and 27. Entry of the amendment and favorable consideration thereof is earnestly requested.

Claims 1 & 15

Claims 1 and 15 requires among other limitations a "at least one digital serial driver" and the camera control unit has "at least one digital serial receiver and is controlled based at least in part upon said timing signal particular to said camera head." Applicant respectfully submits that these limitations are not disclosed or taught in the cited prior art.

The Examiner has submitted that it would be obvious to combine U.S. Patent No. 6,046,769 ("Ikeda et al.") with U.S. Patent No. 6,836,901 ("Chung et al.") as "Chung et al. teaches an imager utilizing at least one digital serial driver 54" and that "this is a low power system that allows for the use of differential signals that are resistant to EMI noise." (Official Action 8/25/06, p. 7.) Applicant, however, respectfully submits that Ikeda et al. is not properly combinable with Chung et al. and even if the two references were to be combined, one would not arrive at the present invention. For example, the Examiner has submitted that Ikeda et al. teaches "a timing signal particular to said camera head, the timing signal actuating said imager and sent to said camera control unit", however, Applicant notes that Chung et al. teaches that the "data transfers width

is set to the word width, which allows a fixed timing relationship between the clock edge and data transfer in both single-ended and differential modes" and that "[t]his fixed timing relationship eliminates the need for and cost of explicit bit synchronization." (Col. 3, Ins. 30-36) (emphasis added). Therefore, if one were to combine the system of Ikeda et al. with the digital serial driver system taught in Chung et al., one does not arrive at a system where the camera control unit is controlled by a timing signal particular to the camera head. Rather, Chung et al. specifically teaches that the camera control unit is not controlled by a timing signal particular to the camera head. When considering a reference, the reference must be considered for its teachings as a whole and it is inappropriate to pick and choose various elements from the references without regard to what the references teach as a whole. *In re Arkley*, 455 F.2d 586, 587-88, 172 U.S.P.Q. 524, 526 (C.C.P.A. 1972). In this case, Chung et al. directly rejects an element of claims 1 and 15 and therefore, is not properly combinable with Ikeda et al. in forming an obviousness rejection of claims 1 and 15.

It is well settled that the mere fact that references can be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the combination. *See, e.g.,* MPEP 2143.01 ("The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination."); *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990). In the present case, Applicant respectfully submits that there is no motivation in the cited prior art to reject the teachings of Chung et al. in favor of the pending claims as Chung et al. specifically

rejects the approach stating that the "fixed timing relationship eliminates the need for and cost of explicit bit synchronization." (Col. 3, lns. 36-37.)

Accordingly, Applicant respectfully submits that Ikeda et al. is not properly combinable with Chung et al. and that any rejection of claims 1 or 15 based on such a combination is inappropriate. In addition, even if one were to combine Ikeda et al. and Chung et al., one would not arrive at the invention as claimed in claims 1 and 15. Further, there is no motivation in either reference to still further modify the references to discard a primary teaching of Chung et al. in view of pending claims 1 and 15.

Claims 25 and 34

Claims 25 and 34 require "a converter" for "converting the analog image signal into the digital image signal." The Examiner has submitted that while U.S. Patent No. 6,449,007 ("Yokoyama") does not teach a "camera head including a converter", that U.S. Patent No. 6,870,566 ("Koide et al.") "teaches an analog to digital converter 103 in an image sensing unit." The Examiner concludes that "it would have been obvious . . . to have moved the analog to digital converter in Yokoyama from the CCU 10 to the camera head 9 as taught in Koide et al. . . . as digital signals are more resistant to noise than are analog signals." (Official Action 8/25/06, p. 13.) Applicant respectfully disagrees.

Yokoyama teaches that "it first object" is "to provide an image sensing system having a camera head unit and a signal processing unit connected by a less number of signal lines by transmitting a clock signal, a horizontal synchronizing signal, and a CCD signal via a single signal line." (Col. 2, ln. 64 – Col. 3, ln. 2.) However, if the A/D

converter 69 in Yokoyama where moved from signal processing unit 10 to camera head 9 as suggested by the Examiner, additional signal lines would have to be added to cable 8. For example, Yokoyama teaches that "the frequency of the reference clock signal 2LCK is halved by a frequency divider 7, then the resultant clock signal CLK is input to the A/D converter 69, the D/A converter 11, the DSP 70, and the phase control unit 5 as a reference clock." (Col. 5, lns 25-30.) If the A/D converter were to be moved to the camera head, this frequency signal would have to be transmitted from the signal processing unit to the camera head increasing the number of signal lines. In addition, the phase control unit 5 receives the analog image signal as part of the synchronization process and therefore would also have to be moved to the camera head, which would greatly increase the number of signal lines in contravention with the first object of the invention. (*See*, Col. 5, lns. 30-47.)

Accordingly, while the Examiner has stated that it would be obvious to move the A/D converter from the signal processing unit to the camera head, this would work directly against stated objects of the invention of Yokoyama and therefore such a modification can not be obvious. *See*, MPEP 2143.01; *In re Gordon*, 733 F.2d 900, 221 USPQ2d 1125 (Fed. Cir. 1984) (a proposed modification can't be obvious if it is contrary to an objective of prior art).

Applicant further submits that claims 25 and 34 require "a serializer, for serializing the digital image signal." The Examiner has submitted that while "Yokoyama does not teach that the camera head includes a serializer" that U.S. Patent No. 6,753,901 ("Takahashi et al.") "teaches an endoscopic imaging system where the video

signal is passed through a serializer 26 (see Fig. 2) before being passed on to a display device" and that it would therefore be obvious to modify Yokoyama in view of Takahashi et al. (Official Action 8/25/06, p. 13.) Applicant respectfully disagrees. The serializer is provided "for serializing the digital image signal" after it has been converted from an analog signal to a digital signal. As stated above, conversion of the analog signal in Yokoyama to a digital signal prior to transmission to the signal processing unit would require a significant redesign of the system, a redesign that abandons specifically stated objects in Yokoyama. As such, the suggested combination and modification can not be obvious.

Applicant further submits that it is well settled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See, e.g.,* MPEP 2143.01; *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990) (fact that prior art "may be capable of being modified to run the way the apparatus is claimed, there must be some suggestion or motivation in the reference to do so."). In the present case, the Examiner has submitted that the motivation to modify Yokoyama with Takahashi et al. is that "this would allow for the use of a minimum number of conductors for passing the signal from the camera head to the camera control unit", however, Yokoyama already addressed this problem. (*See e.g.*, Col. 2, ln. 64 – Col. 3, ln. 2.) This only became an issue because the Examiner modified Yokoyama with Koide et al. in contravention with the first stated object of Yokoyama. Accordingly, there is no suggestion to modify Yokoyama with Koide et al. (especially in view of the fact that it

works against stated objects of the invention) and then further modify that combination with Takahashi et al.

It is respectfully submitted that claims 1-4, 8-11, 13-20, 23-26 and 28-41, all of the claims remaining in the application, are in order for allowance and early notice to that effect is respectfully requested.

Respectfully submitted,

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Wesley W. Whitmyer, Jr., Registration No. 33,558
Steven B. Simonis, Registration No. 54,449
Attorneys for Applicants
ST. ONGE STEWARD JOHNSTON & REENS LLC
986 Bedford Street
Stamford, CT 06905-5619
203 324-6155